

15750 U.S. PTO



022704

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of: Kie Y. Ahn et al.

Title: ATOMIC LAYER-DEPOSITED LaAlO<sub>3</sub> FILMS FOR GATE DIELECTRICS

Attorney Docket No.: 1303.050US2

Customer No.: 21186

**PATENT APPLICATION TRANSMITTAL****MAIL STOP PATENT APPLICATION**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

We are transmitting herewith the following attached items and information (as indicated with an "X"):

- ☒ Return postcard.
- ☒ **DIVISIONAL** of prior Patent Application No. (10/137499) (under 37 CFR 1.53(b)) comprising:
- ☒ Specification (38 pgs, including claims numbered 1 through 45 and a 1 page Abstract).
  - ☒ Formal Drawing(s) (8 sheets).
  - ☒ Copy of signed Declaration (6 pgs) from prior application.
  - ☒ Copy of Power of Attorney from prior application (1 pgs).
  - ☒ Incorporation by Reference: *The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied herewith, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.*
  - ☒ Check in the amount of \$1564.00 to pay the filing fee.
  - ☒ Prior application is assigned of record to Micron Technology, Inc.
  - ☒ Information Disclosure Statement ( 1 pgs), Form 1449 ( 7 pgs ) References NOT enclosed, cited in prior application.
  - ☒ Communication Concerning Related Applications (4 pgs.).

The filing fee has been calculated below as follows:

	No. Filed	No. Extra	Rate	Fee
TOTAL CLAIMS	45-20	25	x 18.00 =	\$450.00
INDEPENDENT CLAIMS	7-3	4	x 86.00 =	\$344.00
[] MULTIPLE DEPENDENT CLAIMS PRESENTED				\$0.00
BASIC FEE				\$770.00
TOTAL				\$1564.00

Please consider this a **PETITION FOR EXTENSION OF TIME** for sufficient number of months to enter these papers. Please charge any additional required fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

Customer Number: 21186

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"Express Mail" mailing label number: EV299683847US

Date of Deposit: February 27, 2004

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 10/789042  
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**S/N Unknown**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Kie Y. Ahn et al.

Examiner: Unknown

Serial No.: Unknown

Group Art Unit: Unknown

Filed: Herewith

Docket: 1303.050US2

Title: ATOMIC LAYER-DEPOSITED LAALO3 FILMS FOR GATE DIELECTRICS

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**COMMUNICATION CONCERNING RELATED APPLICATION(S)**

MS Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Applicants would like to bring to the Examiner's attention the following related application(s) in the above-identified patent application:

<u>Serial/Patent No.</u>	<u>Filing Date</u>	<u>Attorney Docket</u>	<u>Title</u>
09/944981	August 30, 2001	1303.021US1	CRYSTALLINE OR AMOPHOUS MEDIUM-K GATE OXIDES, Y2O3 AND Gd2O3
09/945535	August 30, 2001	1303.026US1	HIGHLY RELIABLE AMORPHOUS HIGH-K GATE OXIDE ZrO2
10/028643	December 20, 2001	1303.030US1	LOW-TEMPERATURE GROWN HIGH QUALITY ULTRA-THIN CoTiO3 GATE DIELECTRICS
10/052983	January 17, 2002	1303.031US1	HIGHLY RELIABLE AMORPHOUS HIGH-k GATE DIELECTRIC ZrOxNy
10/027315	December 20, 2001	1303.033US1	LOW-TEMPERATURE GROWN HIGH-QUALITY ULTRA-THIN PRASEODYMIUM GATE DIELECTRICS
09/797324	March 1, 2001	303.717US1	METHODS, SYSTEMS, AND APPARATUS FOR UNIFORM CHEMICAL-VAPOR DEPOSITIONS

10/099194	March 13, 2002	1303.044US1	EVAPORATION OF Y-Si-O FILMS FOR MEDIUM-k DIELECTRICS
10/081439	February 20, 2002	1303.046US1	EVAPORATED LaAlO3 FILMS FOR GATE DIELECTRICS
10/137058	May 2, 2002	303.802US1	ATOMIC LAYER DEPOSITION AND CONVERSION
10/137168	May 2, 2002	1303.048US1	METHODS FOR ATOMIC-LAYER DEPOSITION OF ALUMINUM OXIDES IN INTEGRATED CIRCUITS
10/137499	May 2, 2002	1303.050US1	ATOMIC LAYER-DEPOSITED LaAlO3 FILMS FOR GATE DIELECTRICS
10/163481	June 5, 2002	1303.056US1	ATOMIC LAYER-DEPOSITED HfAlO3 FILMS FOR GATE DIELECTRICS
10/163686	June 5, 2002	1303.059US1	Pr2O3-BASED La-oxide GATE DIELECTRICS
10/209581	July 30, 2002	1303.061US1	ATOMIC LAYER DEPOSITED NANOLAMINATES OF HfO2/ZrO2 FILMS AS GATE DIELECTRICS
10/191336	July 8, 2002	1303.068US1	MEMORY UTILIZING OXIDE-CONDUCTOR NANOLAMINATES
10/219870	August 15, 2002	1303.069US1	LANTHANIDE DOPED TiOx DIELECTRIC FILMS BY PLASMA OXIDATION
10/219878	August 15, 2002	1303.070US1	LANTHANIDE DOPED TiOx DIELECTRIC FILMS
10/229903	August 28, 2002	1303.078US1	ATOMIC LAYER DEPOSITED HfSiON DIELECTRIC FILMS
10/233309	August 29, 2002	1303.079US1	ATOMIC LAYER DEPOSITED LANTHANIDE DOPED TiOx DIELECTRIC FILMS

COMMUNICATION CONCERNING RELATED APPLICATIONS

Serial Number: Unknown

Filing Date: Herewith

Title: ATOMIC LAYER-DEPOSITED LAALO3 FILMS FOR GATE DIELECTRICS

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10/309583	December 4, 2002	1303.082US1	ATOMIC LAYER DEPOSITED ZR-SN-TI-O FILMS USING TiI4
10/309935	December 4, 2002	1303.083US1	ATOMIC LAYER DEPOSITED Zr-Sn-Ti-O FILMS
10/379470	March 4, 2003	1303.090US1	ATOMIC LAYER DEPOSITED DIELECTRIC LAYERS
10/403734	March 31, 2003	1303.092US1	ATOMIC LAYER DEPOSITED ZrAlxOy DIELECTRIC LAYERS
10/420307	April 22, 2003	1303.097US1	ATOMIC LAYER DEPOSITED ZrTiO4 FILMS
10/602323	June 24, 2003	1303.101US1	LANTHANIDE OXIDE / HAFNIUM OXIDE DIELECTRIC LAYERS
10/602315	June 24, 2003	1303.107US1	LANTHANIDE OXIDE / HAFNIUM OXIDE DIELECTRICS
09/779959	February 9, 2001		
09/838335	April 20, 2001		
09/881408	June 13, 2001		
09/908767	July 18, 2001		
10/765619	January 27, 2004	1303.033US2	LOW-TEMPERATURE GROWN HIGH-QUALITY ULTRA-THIN PRASEODYMIUM GATE DIELECTRICS
10/768597	January 30, 2004	1303.033US3	LOW-TEMPERATURE GROWN HIGH-QUALITY ULTRA-THIN PRASEODYMIUM GATE DIELECTRICS

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Respectfully submitted,

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